

Abstract of the Disclosure

[0061]        An internal combustion engine of the present invention features  
5        separate compression and expansion cycles. The engine includes a separate  
compressor device which pressurizes air by a ratio greater than 15 to 1, at least one  
two stroke combustion cylinder and a compressed air conduit for transferring  
compressed air from the compressor to the at least one combustion cylinder. An air  
injection valve injects the compressed air into the combustion cylinder during the  
10        second half portion of the return stroke of the combustion cylinder. The  
compressed air is mixed with fuel and combusted for expansion during a power  
stroke. In this engine compression occurs only to a minor degree in the combustion  
cylinder. Accordingly, the compression ratio of the present engine may be  
significantly higher or lower than the volumetric expansion ratio of the combustion  
15        cylinder thus resulting in corresponding increases in either power density or  
thermodynamic efficiency respectively.